Coordination Chemistry Reviews, 23 (1977) 130
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Book Review

Handbook of Proton Ionization Heats, by J.J. Christensen, L.D. Hansen and R.M. Izatt, John Wiley, New York, 1976, price £17.90.

This book is a compilation of heats of proton ionization in solution, collected in tables without comment, in which literature values through mid-1975 are given for ΔH, pK, ΔS and ΔCp. In the tables are also found the appropriate reaction, temperature, method and conditions of measurement, literature references, and some supplemental information. The book is indexed according to empirical formula, synonym, and reference. The compilers have sought out original references where at all possible and have recorded only the authors' data and missing quantities, such as pK or ΔS, which could be calculated from the authors' original data. Values from non-refereed sources have not been reported in the tables. Time constrictions prohibited this reviewer from making an exhaustive survey of all the items tabulated in the book. He chose therefore to use the expedient of simply trying to look up data of interest or knowledge to himself as a means of checking the utility of the book. By and large, common organic acids or organic compounds with acidic properties were easy to find and the data were presented in a useful fashion. The book also seems to have included in a thorough way data on oxy- acids and simple binary acids derived from non-metallic centers (e.g. H_2SO_4, H_3PO_4). However, it is very sketchy on the acid reactions of acids with metallic centers. Hydrated metal ions do not appear in the table except for some rather exotic metallic complexes which are hydrated in one or two positions, such as the cobalamines. Chromic acid and molybdic acid are discussed, but none of the heteropoly molybdic or tungstic acids appear in this tabulation.

The compilation in this book does appear to have considerable utility to the solution chemist working with reactions of acids and bases and should certainly be part of the reference collection of any research chemistry library.

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